

**IN THE CLAIMS**

1. (currently amended) A method for resolving data collision in a network shared by a plurality of user, the method comprising:

calculating a first back-off window based at least in part on an estimate of a number of users on the network;

sending the first back-off window to a plurality of users of the network;

calculating a second back-off window based at least in part on a smallest integer equal to or greater than a number, which number results from a product of a number of collisions that occurred within the first back-off window and an average of number of users in the network involved in a collision when the number of users in the network is relatively large; and

sending the second back-off window to one or more of the plurality of users of the network.

2. (original) The method of claim 1, further comprising calculating subsequent back-off windows based at least in part on the number of collisions that occurred within a prior back-off window and sending the subsequent back-off windows to one or more of the plurality of users of the network.

3. (original) The method of claim 1, further comprising initiating a cycle with a limited number of users that can compete for network resources during the cycle.

4. (original) The method of claim 3, wherein calculating the second back-off window comprises calculating the second back-off window in the same cycle as the step of calculating the first back-off window.

5. (original) The method of claim 3, further comprising ending the cycle when there are no collisions within a back-off window.

6. (original) The method of claim 3, further comprising initiating a second cycle subsequent to the first cycle with a limited number of users that can compete for network resources during the second cycle.

7. (original) The method of claim 3, wherein initiating a cycle with a limited number of users comprises initiating a cycle based on a number of users that successfully reserved network resources during a prior cycle.

8. (canceled)

9. (original) The method of claim 1, wherein the step of calculating the second back-off window based at least in part on the number of collisions that occurred within the first back-off window comprises calculating the second back-off window based on the product of the number of collisions that occurred within the first back-off window and a value for the average of number of users in the network involved in a collision of approximately 2.3922.

10. (original) A method for resolving data collision in a network shared by a plurality of users, the method comprising:

sending a first back-off window to a plurality of users of the network;  
calculating a second back-off window based at least in part on a smallest integer equal to or greater than a number, which number results from product of the number of users that collided while attempting to reserve network resources during the first back-off window and an average of number of users in the network involved in a collision when the number of users in the network is relatively large;

sending the second back-off window to one or more of the plurality of users of the network; and

limiting network reservation attempts in the second back-off window to users that collided while attempting to reserve network resources during the first back-off window.

11. (original) The method of claim 10, further comprising calculating subsequent back-off windows based on a number of users that collided in a prior back-off window and sending the subsequent back-off windows to one or more of the plurality of users of the network.
12. (original) The method of claim 11, further comprising limiting network reservation attempts in the subsequent back-off windows to the users that collided while attempting to reserve network resources during a prior back-off window.
13. (original) The method of claim 10, further comprising initiating a first cycle with a limited number of users that can compete for network resources during the cycle.
14. (original) The method of claim 13, further comprising initiating a second cycle when no collisions occurred during a back-off window in the first cycle.
15. (canceled)
16. (currently Amended) The method of claim 10, wherein the step of calculating the second back-off window based at least in part on the number of users that collided while attempting to reserve network resources during the first back-off window comprises calculating the second back-off window based on a product of the number of collisions that occurred within the first back-off window and a value for the average of number of users in the network involved in a collision of approximately between 2.3922.
17. (currently amended) A system for resolving data collisions in a shared network, comprising:
  - a plurality of remote devices; and an access point in communication with the plurality of remote devices, wherein the access point further comprises:
    - a switch for communicating with the plurality of remote devices;

a transceiver for sending information to and receiving information from the plurality of remote devices; and a collision resolution device communicably coupled to the transceiver and the switch, wherein the collision resolution device sends an initial back-off window to the plurality of remote devices;

wherein the collision resolution device calculates and sends a subsequent back-off window based at least in part on a smallest integer equal to or greater than a number, which number results from a product of a number of collisions that occurred within the first back-off window and an average of number of users in the network involved in a collision when the number of users in the network is relatively large; in response to a number of collisions in the initial back-off window; and

wherein the collision resolution device limits the remote devices that can compete for network resources in the subsequent back-off window to remote devices that unsuccessfully attempted to reserve network resources in the initial back-off window.

18. (Original) The system of claim 17, wherein the size of the initial back-off window is based on an estimate of remote devices competing for network resources.

19 (canceled)

20. (Currently Amended) The system of claim 17, wherein the subsequent back-off window is calculated based at least in part on a product of the number of collisions that occurred within the initial back-off window and a value of approximately of between 2 and 3 2.3922.